KENYON & KENYON
Intellectual Property Law

RECEIVED
CENTRAL FAX CENTER
JAN 0 2 2007

333 W. San Carlos Street
Suite 600
San Jose, CA 95110-2731
408.975.7500
Fax 408.975.7501

Fax Transmission

From:	**Sumit Bhattacharya**	Date:	January 2, 2007
Direct Dial:	408.975.7950	Fax:	408.975.7501
Client/Matter:	2207/7086	Total number of pages: (including cover)	9

Please deliver to:

Name	Company	Fax	Phone
Board of Patent Appeals and Interference	**U.S. Patent and Trademark Office**	**571.273.8300**	

Message:

Application No.	:	09/750,150	Confirmation No. 6534
Applicant	:	Stephen J. JOURDAN et al.	
Filed	:	December 29, 2000	
Title	:	MULTI-MODE NON-BINARY PREDICTOR	
TC/A.U.	:	2183	
Examiner	:	Tonia L. MEONSKE	

PAPER(s) ENTITLED: Reply Brief 8 pages

☒ Original will not follow ☐ Original will follow by ☐ Regular Mail ☐ Overnight Delivery ☐ Hand Delivery

The information contained in this facsimile transmission, including any attachments, is subject to the attorney-client privilege, the attorney work product privilege or is confidential information intended only for the use of the named recipient. If the reader of this Notice is not the intended recipient or the employee or agent responsible for delivering this transmission to the intended recipient, you are hereby notified that any use, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this transmission in error, please notify us immediately by telephone, so that we may arrange for its return or destruction at our cost. Thank you.

PAGE 1/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44

Patent

RECEIVED
CENTRAL FAX CENTER
JAN 0 2 2007

Attorney Docket No.: Intel 2207/7086
Serial No.: 09/750,150
Assignee: Intel Corporation

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT	:	Stephen J. JOURDAN et al.
SERIAL NO.	:	09/750,150
FILED	:	December 29, 2000
FOR	:	MULTI-MODE NON-BINARY PREDICTOR
GROUP ART UNIT	:	2183
EXAMINER	:	Tonia L. MEONSKE

M/S: APPEAL BRIEFS - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATION OF FACSIMILE TRANSMISSION
I hereby certify that this Reply Brief is being facsimile transmitted to the Patent and Trademark Office, Fax No. 571-273-8300 on January 2, 2007.
Ellar Rodriguez

REPLY BRIEF UNDER 37 C.F.R. §1.193

Dear Sir:

This Reply Brief is submitted in response to the Examiner's Answer mailed in this case on October 31, 2006.

Appellants submit this Reply Brief to address issues raised in the Examiner's Answer.

REMARKS

Applicants respectfully submit the conclusions in the Examiner's Answer are erroneous for at least the following reasons.

A. Arguments on pages 8 and 9

In the Appeal Brief, Applicants argued, in essence, that the value from the PHT determines whether the 2-level predictor *is to* generate a prediction value. In her Answer, the Examiner agreed. ("Appellant is correct in that the value from the PHT determines whether the 2-level predictor is to generate a prediction value.") *See* Answer dated 10/31/2006, paragraph 5.

Applicants further argued the 2-level predictor, not the PHT, makes a prediction. The PHT serves the function of a basic comparator that determines whether the 2-level comparator *is to* make a prediction. The Wang reference teaches that upon this comparison made by the PHT, the entire embodiment described, the "2-level predictor", makes a prediction. This is affirmed by an examination of Figure 6 (page 288 of Wang) which clearly shows the predicted value to be an output of the 2:1 mux (one element of the "2-level predictor"), and *not* the PHT table. In fact, the Examiner herself states: "[w]hen the value from the selected PHT entry is greater than a specified threshold value, then the 2-level predictor makes a prediction labeled as "Predicted Data Value" in Figure 6." *See* id. Nevertheless, the Examiner asserts the PHT does in fact provide the prediction value of claim 1. *See* id. Applicants disagree for at least the reasons described below.

PAGE 3/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44

Figure 6 of the Wang reference is reproduced below:

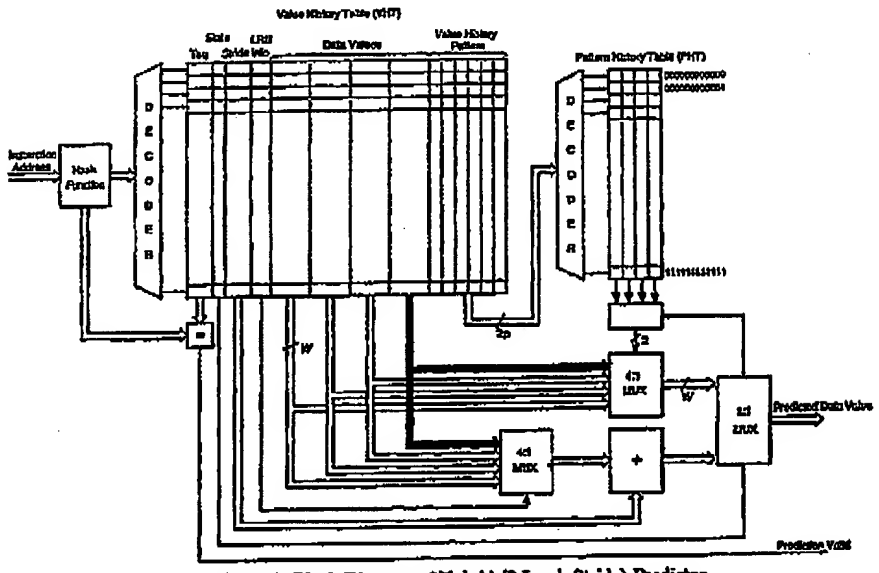


Figure 6: Block Diagram of Hybrid (2-Level, Stride) Predictor

In Figure 6, the output of the PHT table (a comparator) is sent to a register. The output of the register is then utilized as a *control input* (typical of an output of a comparator) to the 4:1 mux and the 2:1 mux. The 2:1 mux outputs the Predicted Data Value. The *data input* to the 2:1 mux is provided by the 4:1 mux and the adder "+". The data inputs are designated by block arrows, whereas the control inputs are designated by line arrows.

As is well known to one of ordinary skill in the art, a control input of a multiplexer (such as the 2:1 multiplexer outputting the Predicted Data Value) is used to select one of the data inputs into the multiplexer. (*See* Fundamentals of Logic Design, © 1995, p. 223). In other words, the Predicted Data Value selected by the 2:1 mux is one of the *data inputs* by the 4:1 mux and the adder "+". The control input provided to the 2:1 mux as a result of the PHT only helps in the *selection* of one of these multiple *data inputs*. Please note, the data inputs provided by the

PAGE 4/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44

4:1 mux and the adder "+", and the output "Predicted Data Value" are all block arrows designating *data inputs*.

As is evident from Figure 6, the PHT table does not provide *data inputs* but only control inputs. Therefore, contrary to the Examiner's assertions, the PHT table described in the embodiment of cited Figure 6 cannot provide a data input (i.e., a "value") that is used as the Predicted Data Value. The Predicted Data Value is one of the values inputted from the 4:1 mux and the adder "+". Therefore, contrary to the Examiner's assertion, Applicants submit the PHT does not provide a prediction value and the Wang reference as a whole fails to teach at least a second table providing a prediction value as described in embodiments of the present application.

The Examiner argues in the cases where the value is greater than predicted value, the prediction of the 2-level predictor is the value from the PHT. *See* id. Applicants disagree. First, Applicants note the Examiner provides no support from the cited reference for this assertion. It is improper to require Applicants to argue a hypothetical assertion without any support or basis in the reference.

In addition, Applicants submit it is difficult to understand why a predictor would use one value to determine *whether* to make a prediction, and then use that same value as the prediction. Furthermore, if the Examiner's assertions are correct, what is the purpose of the two other data inputs inputted into the 2:1 mux? Applicants submit these unsupported assertions are inadequate to support a proper rejection of the embodiments of the present application.

The Examiner further asserts when the 2-level predictor provides the prediction, the "Predicted Data Value" is from the PHT and when the stride based predictor provides the prediction then the "Predicted Data Value" is from the VHT. Applicants note, similar to above,

PAGE 5/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44

the Examiner fails to offer support for these assertions. Moreover, an examination of Figure 6, for at least the reasons discussed above, disproves this assertion as well.

The Examiner may be relying upon the following language in the reference: "The 2-level predictor (not the PHT) makes a prediction if the maximum count value in the selected PHT entry is greater than the specified threshold value. If the 2-level predictor makes a prediction, then that value is selected as the hybrid predictor's prediction." Applicants submit the phrase "that value" is referring to the 2-level predictor's prediction, not the maximum count value from the PHT. The prediction value does not come from the PHT at all. There is no teaching or suggestion in the cited reference that the prediction value comes from the PHT at all, and is contrary to the expected operation of the embodiment of the cited Figure 6.

B. Arguments on pages 9 and 10

The Examiner further argues Wang describes determining a hit in the second table. Applicants disagree. Applicants maintain that the PHT is merely serving the function of a basic comparator circuit that determines whether the 2-level comparator is to make a prediction. The comparison of two numbers does not comprise a "hit" as disclosed in Applicants' invention.

The Examiner further argues a "hit" is interpreted as a successful retrieval of data from a memory. *See* Answer, paragraph 6. Applicants disagree. As stated in the Appeal Brief, a "hit" as described in embodiments of the present invention may be defined as:

> *Tables 122 and 124 are comprised of fields that store prediction values and other information to generate prediction value 128...* A match result within the PIP table 122 provides a valid signal 126... Preferably, valid signal 126 is a "hit" signal that indicates a hit has occurred in PIP table 122... Depending on the information and data, prediction value 128 is provided by either PIP table 122 or next value table 124... *The predicted value is selected from PIP table 122 or next value table 124 and is provided as predicted value 128. (emphasis added)*

PAGE 6/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44

(*See* Specification page 24, line 5)

Therefore, the present application describes a "hit" not merely as a successful retrieval of data from a memory, but a determination of whether a match occurs in a table (or the like). What the Examiner is describing is commonly understood to be "load" function. A "load" function is not the same as a memory "hit", and Applicants submit the difference between a "load" function and a memory "hit" is commonly understood by one of ordinary skill in the art.

Moreover, Applicants maintain, for at least the reasons described above, a *data input* representing the Predicted Data Value is not retrieved from the PHT. The PHT, upon making its conditional comparison, provides a control input utilized to help the 2:1 mux select a prediction value from the data outputs of the 4:1 mux and the "+" adder. Therefore there is no "hit" as described in embodiments of the present application.

C. Arguments on page 10

In the Appeal Brief, Applicants asserted as follows:

> According to an embodiment of the present invention, a match result of a prediction value within the second table results in a "hit". It is clear the comparator PHT in Wang is incapable of providing such a "hit" as defined by the present invention.

(*See* Appeal Brief, page 10)

The Examiner asserts that by utilizing this section, Applicant is attempting to relate the "prediction value" in claim 1 to the "hit" in claim 1. *See* Examiner's Answer, paragraph 7. This is not so. Applicants are providing this section to illustrate one embodiment of the present application which aids in further clarifying the term "hit" as described in the present application. For at least the reasons described above, one of ordinary skill in the art would understand a "hit" to be a determination of whether a match occurs in a table (or the like), not merely a successful

PAGE 7/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44

retrieval of data memory. Applicants maintain the cited reference fails to teach or describe at least determining a hit in a second table.

PAGE 8/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44

CONCLUSION

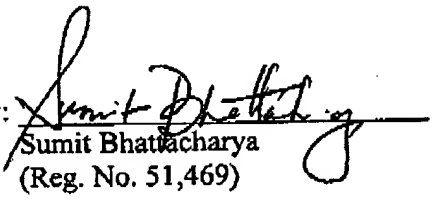
For at least these reasons, Claims 1-26 are believed to be patentable over the cited references, individually and in combination. Withdrawal of the rejections is, therefore, respectfully requested.

Appellants therefore respectfully request that the Board of Patent Appeals and Interferences reverse the Examiner's decision rejecting claims 1-26 and direct the Examiner to pass the case to issue. The Examiner is hereby authorized to charge any additional fees which may be necessary for consideration of this paper to Kenyon & Kenyon LLP Deposit Account No. **11-0600.**

Respectfully submitted,

KENYON & KENYON LLP

Date: January 2, 2007

By: 
Sumit Bhattacharya
(Reg. No. 51,469)

KENYON & KENYON LLP
333 West San Carlos St., Suite 600
San Jose, CA 95110
Telephone: (408) 975-7500
Facsimile: (408) 975-7501

PAGE 9/9 * RCVD AT 1/2/2007 7:45:55 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-2/8 * DNIS:2738300 * CSID:14089757501 * DURATION (mm-ss):02-44 TAI P.09